

(12)

(21) 2 401 806

(51) Int. Cl. 7: **F16H 49/00**

(22) 22.02.2001

(85) 03.09.2002

(86) PCT/EP01/02038

(87) WO01/066976

(30) 100 10 680.3 DE 04.03.2000

(71) OECHSLER AKTIENGESELLSCHAFT,  
Matthias Oechsler  
Strasse 9  
D-91522, ANSBACH, XX (DE).

(72) BOGELEIN, JOSEPH (DE).  
POHLAU, FRANK (DE).

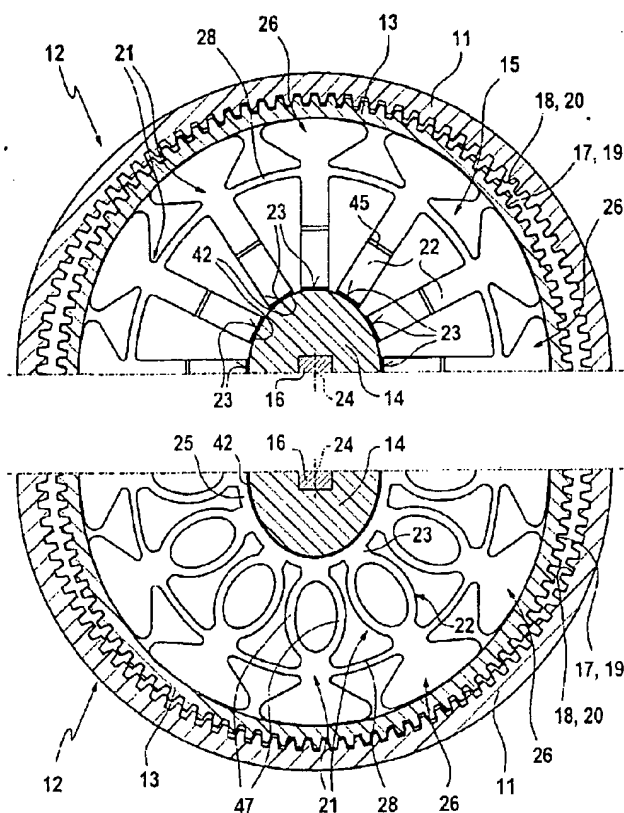
(74) FETHERSTONHAUGH & CO.

(54) REDUCTEUR A PLANETAIRE ET ROUES A DENTURE INTERIEURE DESTINEES A CE DERNIER  
(54) HARMONIC DRIVE AND INTERNAL GEARED WHEELS FOR A DRIVE OF THIS TYPE

(86) Date de dépôt PCT/PCT Filing Date: 2001/02/22  
(87) Date publication PCT/PCT Publication Date: 2001/09/13  
(85) Entrée phase nationale/National Entry: 2002/09/03  
(86) N° demande PCT/PCT Application No.: EP 2001/002038  
(87) N° publication PCT/PCT Publication No.: 2001/066976  
(30) Priorité/Priority: 2000/03/04 (100 10 680.3) DE

(51) Cl.Int.<sup>7</sup>/Int.Cl.<sup>7</sup> F16H 49/00  
(71) Demandeur/Applicant:  
OECHSLER AKTIENGESELLSCHAFT, DE  
(72) Inventeurs/Inventors:  
BOGELEIN, JOSEPH, DE;  
POHLAU, FRANK, DE  
(74) Agent: FETHERSTONHAUGH & CO.

(54) Titre : REDUCTEUR A PLANETAIRE ET ROUES A DENTURE INTERIEURE DESTINEES A CE DERNIER  
(54) Title: HARMONIC DRIVE AND INTERNAL GEARED WHEELS FOR A DRIVE OF THIS TYPE

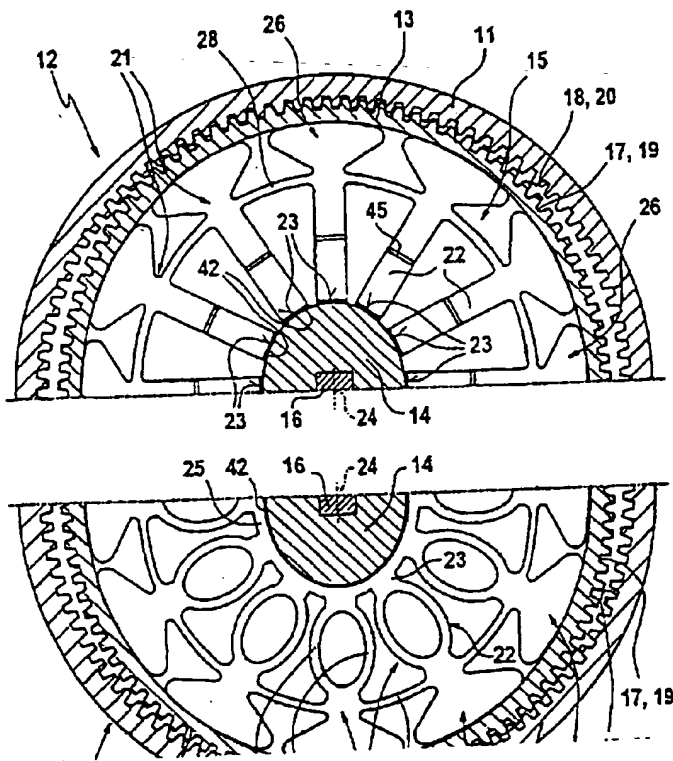


(57) Abrégé/Abstract:

The invention relates to a harmonic drive (12) which can be provided with overload protection that is easy to influence constructionally and a free-wheeling characteristic. To this end, the spokes (21) of the internal geared wheel (15) are specifically deformable depending on the torque or the direction of rotation. The spoke shafts (22) are divided crosswise to the drive axis (24) or in a radial direction in relation thereto. This division (45) is bridged over flexibly in the peripheral direction of the internal geared wheel so that the effective radial length of the spoke may be reduced in the presence of the appropriate bending stress

(57) Abrégé(suite)/Abstract(continued):

by buckling the shaft, in order to then eliminate the local toothing contact between the internal geared wheel edges (13) and the outer support ring (11) in the extension of the spoke. The bridging of the spoke division can be configured differently for the two directions of rotation in order to obtain different response characteristics, up to direction-dependent free-wheeling characteristics e.g. in the event of a considerably unsymmetrical spoke shaft course in relation to the radials.



(57) Abstract: The invention relates to a harmonic drive (12) which can be provided with overload protection that is easy to influence constructionally and a free-wheeling characteristic. To this end, the spokes (21) of the internal geared wheel (15) are specifically deformable depending on the torque or the direction of rotation. The spoke shafts (22) are divided crosswise to the drive axis (24) or in a radial direction in relation thereto. This division (45) is bridged over flexibly in the peripheral direction of the internal geared wheel so that the effective radial length of the spoke may be reduced in the presence of the appropriate bending stress by buckling the shaft, in order to then eliminate the local toothing contact between the internal geared wheel edges (13) and the outer support ring (11) in the extension of the spoke. The bridging of the spoke division can be configured differently for the two directions of rotation in order to obtain different response characteristics, up to direction-dependent free-wheeling characteristics e.g. in the event of a considerably unsymmetrical spoke shaft course in relation to the radials.